

What Is Claimed Is:

1 1. A method of providing different quality of services (QOS) in a communication
2 network to data related to different point-to-point sessions, said method comprising:
3 provisioning in a first aggregation device a plurality of virtual circuits, said plurality
4 of virtual circuits being provisioned between said first aggregation device and a second
5 aggregation device located in said communication network, each of said plurality of virtual
6 circuits being provisioned to provide a different QOS;
7 receiving in said first aggregation device a plurality of datagrams, each of said
8 plurality of datagrams being related to a corresponding one of a plurality of point-to-point
9 sessions;
10 determining a point-to-point session to which each of said plurality of datagrams
11 relates to;
12 assigning each of said plurality of datagrams to one of said plurality of virtual circuits
13 depending on the QOS desired for the corresponding point-to-point session; and
14 sending the data in each of said datagrams to said second aggregation device in the
15 form of a packet on a corresponding assigned virtual circuit,
16 whereby different point-to-point sessions receive different QOS.

1 2. The method of claim 1, wherein said packet comprises an asynchronous transfer
2 mode (ATM) cell.

1 3. The method of claim 2, wherein said plurality of virtual circuits supports a tunnel
2 between said first aggregation device and said second aggregation device.

1 4. The method of claim 3, wherein said plurality of virtual circuits are comprised in
2 a virtual circuit (VC) bundle supporting said tunnel, said method further comprising mapping
3 said point-to-point session to said tunnel by examining a table, wherein said table further
4 specifies a precedence value associated with said point-to-point session, wherein said
5 assigning comprises determining said one of said plurality of virtual circuits based on said
6 precedence value, whereby different point-to-point sessions supported on said tunnel receive
7 different QOS.

1 5. The method of claim 1, further comprising indicating in a table the specific one of
2 said plurality of virtual circuits to which each of said plurality of point-to-point sessions is
3 to be assigned, wherein said assigning comprises examining said table.

1 6. The method of claim 1, wherein each of said plurality of datagrams is received
2 according to a layer-3 protocol.

1 7. The method of claim 1, further comprising receiving said packet in said second
2 aggregation device and forwarding the data in said packet to an system related to the
3 corresponding point-to-point session.

1 8. A first aggregation device for providing different quality of services (QOS) in a
2 communication network to data related to different point-to-point sessions, said aggregation
3 device comprising:

4 means for provisioning a plurality of virtual circuits, said plurality of virtual circuits
5 being provisioned between said first aggregation device and a second aggregation device

6 located in said communication network, each of said plurality of virtual circuits being
7 provisioned to provide a different QOS;

8 means for receiving in said first aggregation device a plurality of datagrams, each of
9 said plurality of datagrams being related to a corresponding one of a plurality of point-to-
10 point sessions;

11 means for determining a point-to-point session to which each of said plurality of
12 datagrams relate to;

13 means for assigning each of said plurality of datagrams to one of said plurality of
14 virtual circuits depending on the QOS desired for the corresponding point-to-point session;

15 and

16 means for sending the data in each of said datagrams to said second aggregation
17 device in the form of a packet on a corresponding assigned virtual circuit,

18 whereby different point-to-point sessions receive different QOS.

1 9. The aggregation device of claim 8, wherein said packet comprises an asynchronous
2 transfer mode (ATM) cell.

1 10. The aggregation device of claim 9, wherein said plurality of virtual circuits
2 supports a tunnel between said first aggregation device and said second aggregation device,
3 wherein said plurality of virtual circuits are comprised in a virtual circuit (VC) bundle,
4 wherein said means for assigning first maps said point-to-point session to said tunnel and
5 then assigns the corresponding datagrams to one of said plurality of virtual circuits depending
6 on a QOS desired for the point-to-point session, wherein said QOS desired for the point-to-
7 point session is specified by a precedence value in a table.

1 11. The aggregation device of claim 8, further comprising means for indicating the
2 specific one of said plurality of virtual circuits to which each of said plurality of point-to-
3 point sessions is to be assigned, wherein said assigning comprises interfacing with said means
4 for indicating.

1 12. A first aggregation device for providing different quality of services (QOS) in a
2 communication network to data related to different point-to-point sessions, said aggregation
3 device comprising:

4 an inbound interface receiving a plurality of datagrams, each of said plurality of
5 datagrams being related to a corresponding one of a plurality of point-to-point sessions;

6 a memory indicating one of a plurality of virtual circuits to transfer data related to
7 each of said plurality of point-to-point sessions, each of said plurality of virtual circuits being
8 provisioned to provide a different QOS between said first aggregation device and a second
9 aggregation device on said communication network;

10 a classifier examining each of said plurality of datagrams to determine the specific
11 point-to-point session to which each datagram relates to;

12 an encapsulator generating a packet corresponding to each of said plurality of
13 datagrams, a header of each packet containing a virtual circuit identifier identifying one of
14 said plurality of virtual circuits, wherein said one of said plurality of virtual circuits is
15 determined based on a QOS desired for a corresponding point-to-point session; and

16 an outbound interface sending said packet corresponding to each of said plurality of
17 datagrams on a virtual circuit specified by the corresponding header,

18 whereby the data related to different point-to-point sessions receives different QOS.

1 13. The first aggregation device of claim 12, wherein said memory is configured to
2 indicate the specific one of said plurality of virtual circuits to which each of said point-to-
3 point sessions is to be assigned.

1 14. The first aggregation device of claim 12, wherein said memory is configured to
2 indicate a precedence value representing said QOS desired for each of said point-to-point
3 sessions, and said encapsulator determines said virtual circuit identifier for each of said
4 packets by examining said precedence value.

1 15. The first aggregation device of claim 12, wherein said packet comprises an
2 asynchronous transfer mode (ATM) cell.

1 16. The first aggregation device of claim 13, wherein said plurality of virtual circuits
2 supports a tunnel between said first aggregation device and said second aggregation device,
3 wherein said classifier maps said point to point session to said tunnel first and then said point-
4 to-point session is mapped to said one of said plurality of virtual circuits.

1 17. The first aggregation device of claim 16, wherein said plurality of virtual circuits
2 are comprised in a virtual circuit (VC) bundle.

1 18. The first aggregation device of claim 12, further comprising a table indicating the
2 specific one of said plurality of virtual circuits to which each of said plurality of point-to-
3 point sessions is to be assigned, wherein said assigning comprises examining said table.

1 19. The first aggregation device of claim 12, wherein each of said plurality of
2 datagrams is received according to a layer-3 protocol.

1 20. A computer readable medium carrying one or more sequences of instructions for
2 causing a first aggregation device to provide different quality of services (QOS) in a
3 communication network to data related to different point-to-point sessions, wherein execution
4 of said one or more sequences of instructions by one or more processors contained in said
5 first aggregation device causes said one or more processors to perform the actions of:

6 provisioning in a first aggregation device a plurality of virtual circuits, said plurality
7 of virtual circuits being provisioned between said first aggregation device and a second
8 aggregation device located in said communication network, each of said plurality of virtual
9 circuits being provisioned to provide a different QOS;

10 receiving in said first aggregation device a plurality of datagrams, each of said
11 plurality of datagrams being related to a corresponding one of a plurality of point-to-point
12 sessions;

13 determining a point-to-point session to which each of said plurality of datagrams
14 relates to;

15 assigning each of said plurality of datagrams to one of said plurality of virtual circuits
16 depending on the QOS desired for the corresponding point-to-point session; and

17 sending the data in each of said datagrams to said second aggregation device in the
18 form of a packet on a corresponding assigned virtual circuit,

19 whereby different point-to-point sessions receive different QOS.

1 21. The computer readable medium of claim 20, wherein said packet comprises an
2 asynchronous transfer mode (ATM) cell.

1 22. The computer readable medium of claim 21, wherein said plurality of virtual
2 circuits support a tunnel between said first aggregation device and said second aggregation
3 device, and wherein said plurality of virtual circuits are comprised in a virtual circuit (VC)
4 bundle, said one or more sequences of instructions causing said one or more processors to
5 perform the further action of maintaining a table indicating a mapping of each point-to-point
6 session to said tunnel, wherein said table further indicates a precedence value associated with
7 point-to-point session, wherein said assigning comprises determining said one of said
8 plurality of circuits based on said precedence value.

1 23. The computer readable medium of claim 20, further comprising indicating in a
2 table the specific one of said plurality of virtual circuits to which each of said plurality of
3 point-to-point sessions is to be assigned, wherein said assigning comprises examining said
4 table.

1 24. The computer readable medium of claim 20, wherein each of said plurality of
2 datagrams is received according to a layer-3 protocol.

1 25. The computer readable medium of claim 20, further comprising:
2 indicating the services to be provided to a user;
3 determining said user according to an authentication protocol when a corresponding
4 point-to-point session is established; and

- 5 indicating the services desired for said user using a session identifier assigned to said
- 6 corresponding point-to-point session.

5000 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000 16000 17000 18000 19000 20000 21000 22000 23000 24000 25000 26000 27000 28000 29000 30000 31000 32000 33000 34000 35000 36000 37000 38000 39000 40000 41000 42000 43000 44000 45000 46000 47000 48000 49000 50000 51000 52000 53000 54000 55000 56000 57000 58000 59000 60000 61000 62000 63000 64000 65000 66000 67000 68000 69000 70000 71000 72000 73000 74000 75000 76000 77000 78000 79000 80000 81000 82000 83000 84000 85000 86000 87000 88000 89000 90000 91000 92000 93000 94000 95000 96000 97000 98000 99000 100000